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THE GROWTH OF THE HEAD AND FACE IN AMERICAN (WHITE), GERMAN-AMERICAN AND FILIPINO CHILDREN¹

By ROBERT BENNETT BEAN

MATERIALS

146 Filipino girls	}	Manila, Philippine Islands.
579 Filipino boys		
309 German girls	}	Ann Arbor, Michigan.
324 German boys		
412 American girls		
415 American boys		
<u>415</u>		
2,185	Total.	

THE GROWTH OF THE HEAD DIAMETERS²

Between the ages of six and sixteen the head grows in length least, 0.9 cm., in the American girls, and most, 1.6 cm., in the Filipino boys; in breadth least, 0.5 cm., in the American girls, and most, 1.1 cm., in the German boys; and in height least, 0.5 cm., in the German and American girls, and most, 1.1 cm., in the Filipino boys. The heads of the Filipinos grow more rapidly in length between six and eleven years of age than between eleven and sixteen years of age, whereas the heads of the Germans and Americans grow more rapidly in the latter than in the former period. What is true of the Germans and Americans in relation to the Filipinos is also true of the boys in relation to the girls.

The head size as represented by the module (length plus breadth plus height) increases least, nineteen points, in the American girls and most, thirty-five points, in the Filipino boys.

At six years of age the heads of the Americans of both sexes are the largest, the heads of the Filipinos are the smallest, and the

¹ Presented first at the New Orleans Academy of Sciences in 1914; read by title before the Anthropological Association at Philadelphia.

² Length, breadth, and height.

heads of the Germans are nearly as large as those of the Americans. At sixteen years of age the heads of the Filipinos are the smallest, and the heads of the Americans are nearly as large as those of the Germans.

The cephalic index decreases with age for the length breadth index least, 0.0, for the Filipino girls, and most, 3.3, for the Filipino boys; and for the length height index least, 0.4, for the Filipino boys, and most, 2.7, for the German girls.

GROWTH OF HEAD CIRCUMFERENCES¹

The forehead and occipital regions are large in the boys and in the Americans, the frontal and parietal regions are large in the girls and in the Germans and Filipinos. The forehead and frontal regions together are large in the girls and in the older children and the occipital and parietal regions together are large in the boys and in the younger children.

From six to sixteen years of age, the forehead, frontal, and parietal regions grow most in the Filipinos, less in the Germans, and least in the Americans, but the reverse is true of the occipital region. The forehead, frontal and occipital regions grow more in the boys than in the girls, and this is especially true of the occipital region, whereas the parietal region grows more in the girls than in the boys.

It is notable that, in relation to each of the other regions, the forehead increases in size and the parietal region decreases with age.

The large size and greater growth of the parietal region are characteristic of the girls and of the young children, and the large size and greater growth of the occipital region are characteristic of the boys and of the older children. The Filipinos resemble the girls in this respect, and the Americans resemble the boys, whereas the Germans are more or less intermediate.

The Hypo- types are like the Filipinos, the Hyper- types are like the Americans and the Meso- types are like the Germans.

THE GROWTH OF THE FACE²

The growth of the face as a whole may be considered by taking the product of the length and breadth. From this standpoint the

¹Frontal, forehead, parietal, and occipital.

²Length, breadth, and facial angle.

growth from six to sixteen years is least in the Filipino girls, greatest in the American boys, with the others in between, the boys greater than the girls. The face increases about 33 per cent. in the girls and about 50 per cent. in the boys during the ten year period.

The face length increases with age about 2 centimeters in ten years. The girl's face grows more from six to eleven years and the boy's from eleven to sixteen years. The face of the Filipino is shorter than that of the German and American, about 1 centimeter at sixteen years and about 0.3 centimeter at six years. The face of the Filipino grows less in length than that of the German and American from six to sixteen years.

The face breadth increases with age from 11.3 centimeters at 6 years to 13.1 at sixteen years. The face breadth of the girls grows more rapidly from six to eleven and that of the boys from eleven to sixteen. The face of the Filipino is as broad as that of the German and broader than that of the American, and the growth of face is about the same in breadth for the three peoples.

The face index increases with age, the face becomes longer relative to its width, and this increase is greatest in the Americans, less in the Germans, and least in the Filipinos. The increase in the Germans is greatest from six to eleven years and in the Americans it is greatest from eleven to sixteen years.

The facial angle represents the projection of the maxilla, and with increase of age this is greater in the American boys and less in the Filipino boys than is apparent in the German and American girls and the German boys. The Filipino girls have no records made of the facial angle.

CEPHALO-FACIAL INDEX¹

This represents the size of the face in terms of the head, the latter always 100. The face grows relatively more than the head from six to sixteen years, relatively more from six to eleven in the Germans and Americans and relatively more from eleven to sixteen in the Filipinos. At six years the Filipinos have relatively the largest faces, and the Americans relatively the smallest, with the

¹ Originated by the author.

Germans in between, at eleven this is reversed, and at sixteen all are about the same.

The cephalic index decreases with age, and it decreases from the Filipinos through the Germans to the Americans. The face index increases with age, and it increases from the Filipinos through the Germans to the Americans. If the process of development recapitulates the progress of evolution then the Americans represent in evolution what the adult represents in development, and the Germans and Filipinos are less mature stages. The Filipinos represent what I have called Hypo-phylo-morphs, the Germans Meso-phylo-morphs (?), and the Americans Hyper-phylo-morphs. In each group may be found adult individuals with varying degrees of development in head and face form, and these I would classify as Hypo-onto-morph, Meso-onto-morph, and Hyper-onto-morph, depending upon the extent of development. Crossing of races has introduced the Phylo- types into nearly all peoples, therefore the six forms may be distinguished among almost all mixed races. Among the white peoples the Hypo- types are rare, but among the Filipinos the Hyper- types are abundant. More white peoples have mixed with the Filipinos than Filipinos with the white peoples.

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